



State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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November 30, 1999

TO: Minerals File

FROM: Anthony A. Gallegos, Senior Reclamation Specialist *aa*

RE: Site Inspection, Kennecott Utah Copper Corporation (KUCC), Tailings Expansion, M/035/015, Salt Lake County, Utah

Date of Inspection: November 18, 1999
Time of Inspection: 1300 - 1630
Conditions: partly cloudy, cool
Participants: Alex Reynoso, Nick Tzourtzouklis, Rich Borden, KUCC; Tony Gallegos, Doug Jensen, Amanda Smith, DOGM

Purpose of Inspection: to examine the tailings expansion project in consideration of a five year reclamation surety review

The inspection began with a brief meeting at the main office for the tailings expansion project. Alex Reynoso, Contract Administrator for the KUCC North Tailings Operations provided an overview of the tailings expansion and the current project status. They began spigotting tailings (for construction of the north impoundment?) in May 1999. This task was several months later than originally anticipated due to problems with the decant pumping system. At this time, nearly all of the drainage blanket has been covered with cycloned tailings as part of the embankment construction. The depth of this cover was initially proposed as three feet, however, the as built depth is closer to five feet. The plan is to construct the new embankment during nine months of the year and then perform equipment maintenance during the winter months.

On the existing tailings impoundment, they completed construction of the Number 2 reclaim dike last year. A majority of the area within the reclaim dike has been seeded. Construction of the Number 3 reclaim dike is about to begin. Outfall #008 is the discharge on the western edge of the impoundment which was recently put into a pipe to convey it to the same discharge point into the Great Salt Lake. A new outfall #0012 is being applied for. Both cyclone stations are up and running.

We then proceeded on the field portion of the inspection traveling first from the tailings office along the west perimeter of the existing impoundment. The swamp buggy purchased for use in reclamation of the tailings is being sold due to a design flaw which made it ineffective for hydroseeding. Photographs were taken showing the west cyclone station and the recent construction along the pipeline corridor associated with raising the tailings embankment and initial work in anticipation of constructing

reclaim dike Number 3. Berm areas along our route had been hydroseeded to stabilize the disturbed soils and minimize dust. We then examined the seeded area bounded by the Number 2 reclaim dike. Photographs will show the amount of vegetation success and the two regions seeded at different times. Approximately 500 acres were seeded. Part of this seeded area was seeded with the proposed final reclamation seed mix, while another part was seeded with the rye seed mix. The rye mix was used on those areas which were still too wet. At the time of this inspection there was some vegetation success in the area with the final seed mix, while the rye area did not have much vegetation yet. A large portion of the reseeded area had been fenced in preparation for feeding cattle within the area as part of the reclamation scheme. Continuing south on the western side we observed mixing of the sludges as part of the stabilization process prior to placement of this material in the engineered repository. Along the western perimeter were areas which had been recently disturbed and received biosolids application.

We next examined an area on the south end of the impoundment. An area here had recently received biosolids at an application rate of approximately 10 to 15 tons per acre. Cattle were observed in a reclaimed area on the southeast portion of the tailings. Several groups of deer were also observed in the south - southeast portion of the impoundment.

We then proceeded around the impoundment by heading north along the eastern perimeter past the east cyclone station. The sediment pond on the eastern side currently contains water. The outfall to the C7 ditch located adjacent to the south side of the pond did not contain water. There was some water ponding on the surface further south of the sediment pond and ditch. This water is due to seeps and springs on this side of the impoundment.

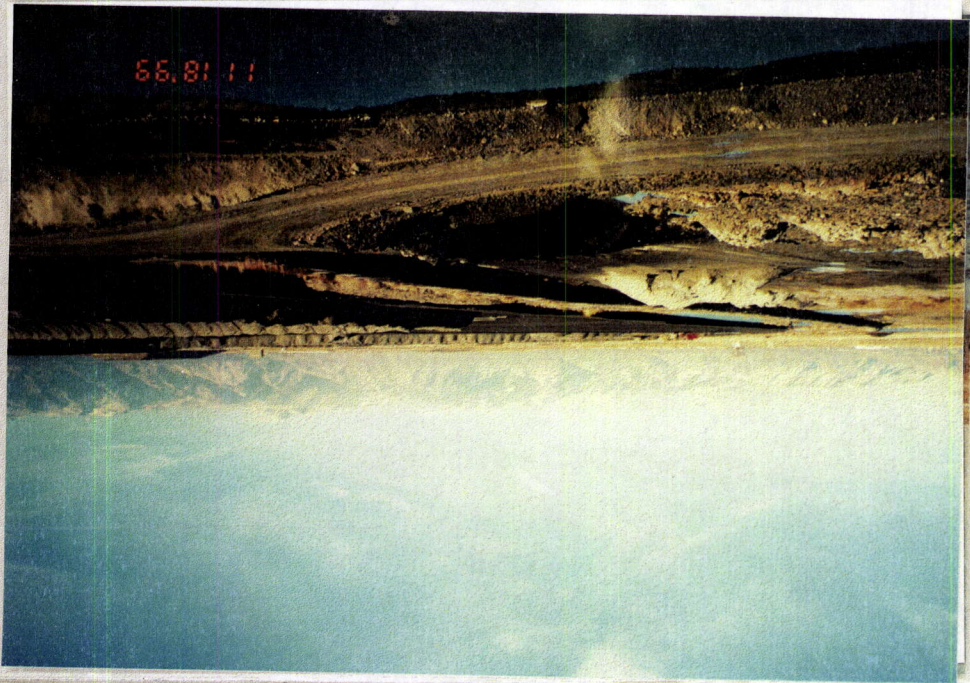
We proceeded past the siphon area where siphons direct the decant water from the existing impoundment to either the clarification canal or sediment pond. We then examined the area where the expansion embankment ties in to the existing impoundment. Some large diameter HDPE pipe was currently stored in this area. Photos were taken showing the finger drain systems being constructed in this area as part of the new embankment. A dozer was currently working in this area. From the northeast corner of the existing impoundment we could look down on the ongoing cell construction of the expansion embankment. Photographs were taken to show the construction technique and the various states stages of cell construction.

We then examined a pump station near the C7 outfall ditch on the northeast end of the expansion area. Photographs were taken of this as a typical pump station. From here we drove back through the area where the embankment had settled and proceeded to the recently constructed decant pump station for the expansion. The impounding area in the expansion was currently flooded and the pump station was floating. This pump station was designed to float the main pump barge which is mounted on a platform connected by a boom to the present tailings embankment. The boom is hinged at the foundation to allow the barge to float up and down. This station will have to be raised after the tailings level in the expansion area has risen considerably. This was the last field stop of the inspection. We returned to the main tailings office for a wrap up discussion.

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In conclusion, the Division will prepare an inspection memo and send copies to KUCC personnel. The Division will need to prepare an update to the reclamation surety estimate and send that information to KUCC in a separate letter. Based on this inspection, it appears that the previous reclamation estimate will only require an adjustment for escalation. There appear to be no significant deviations from the approved expansion plan which warrant other adjustments to the estimate.

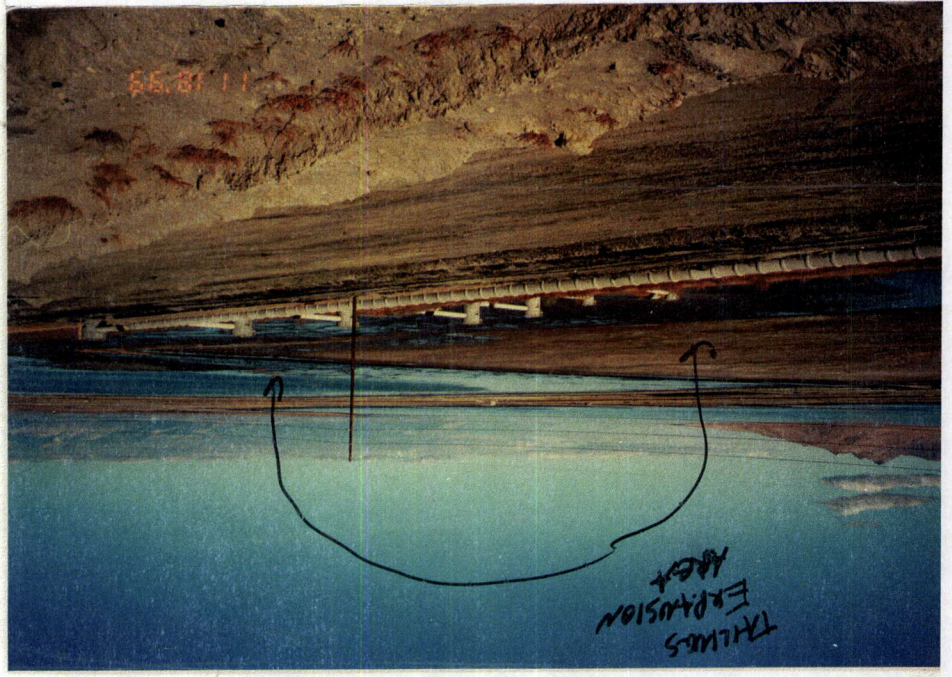
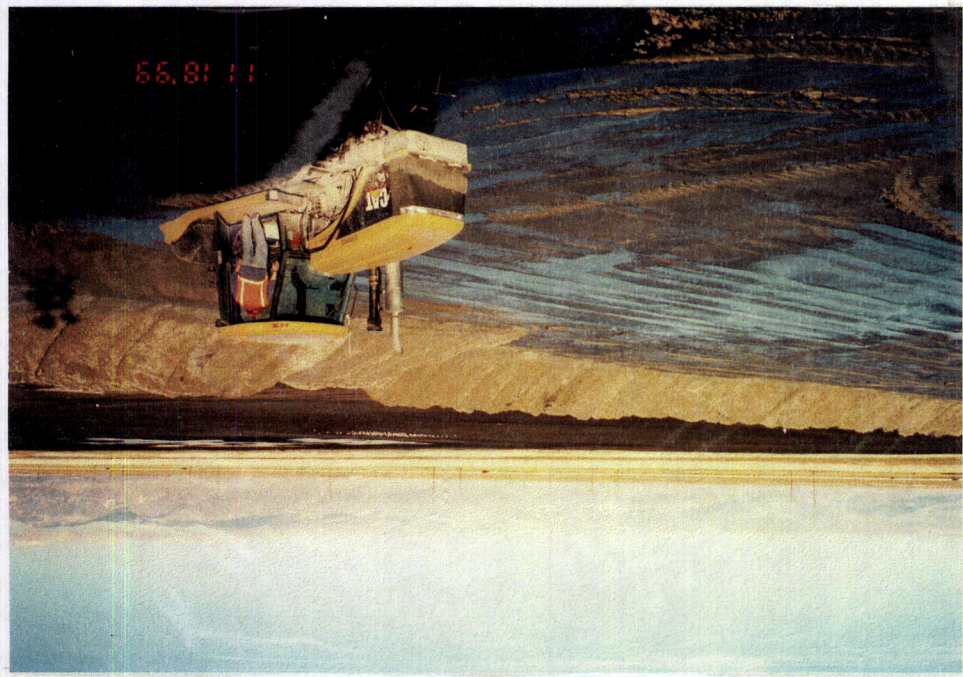
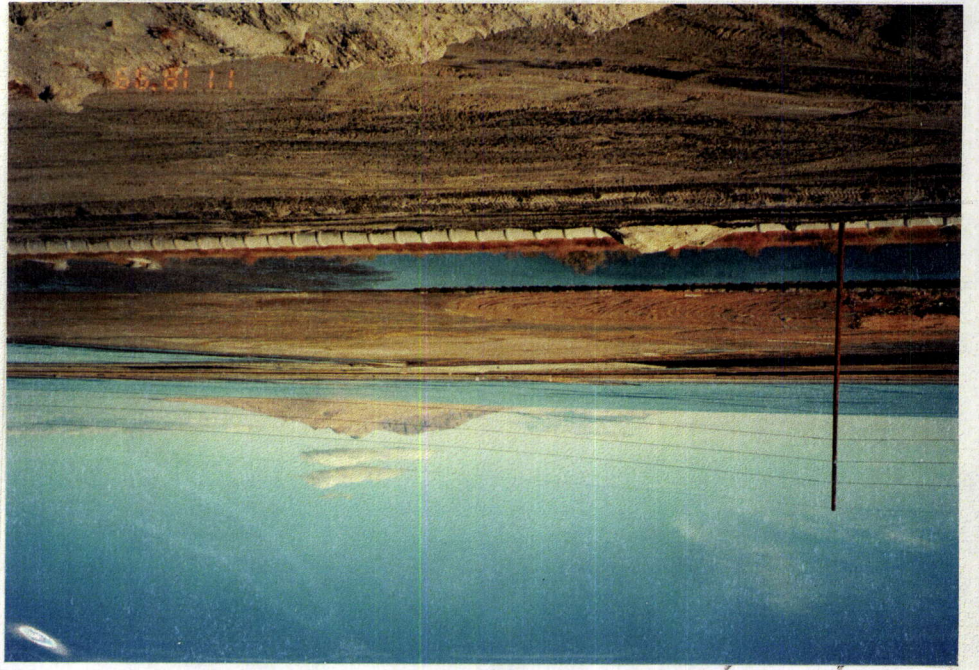
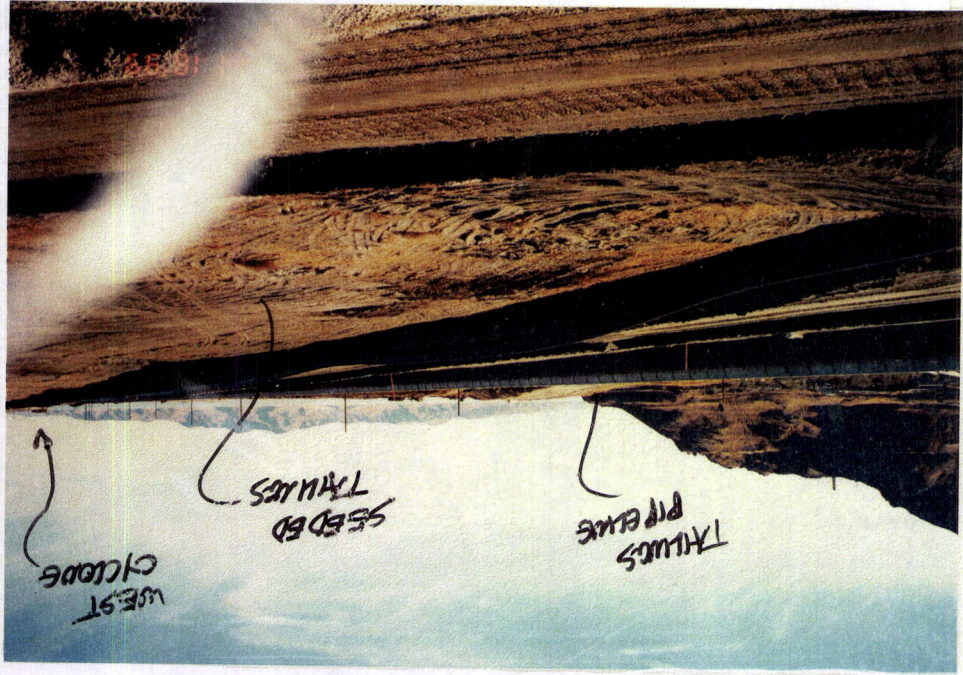
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cc: Paula Doughty, KUCC
Rich Borden, KUCC
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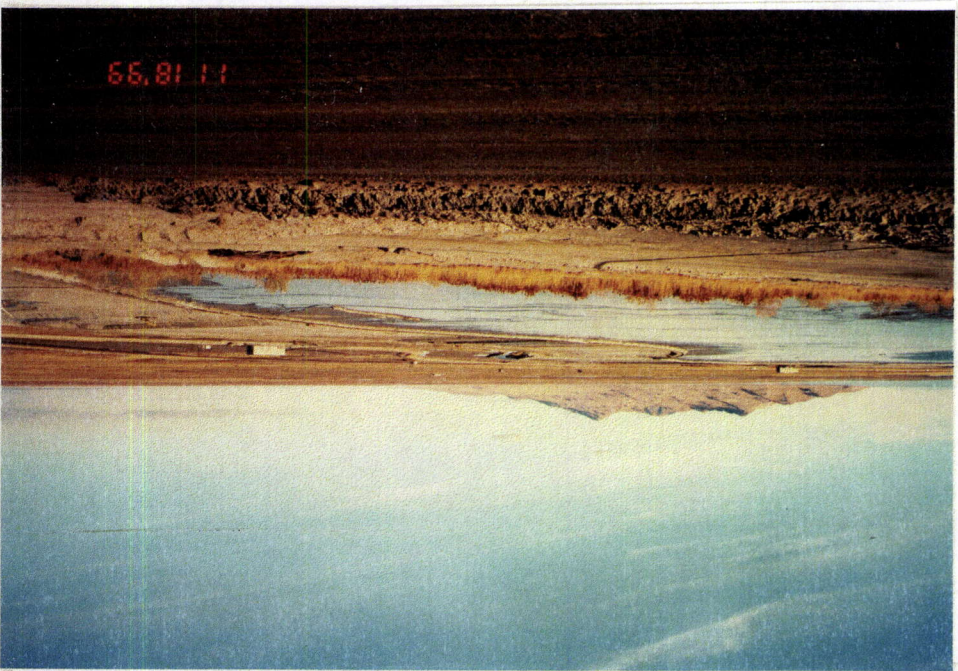
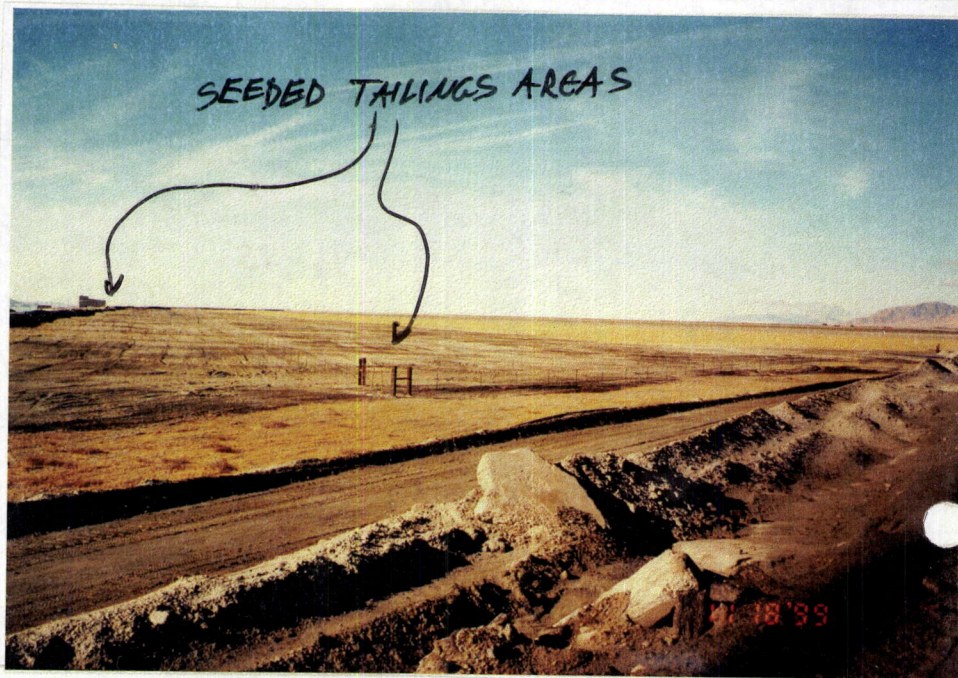
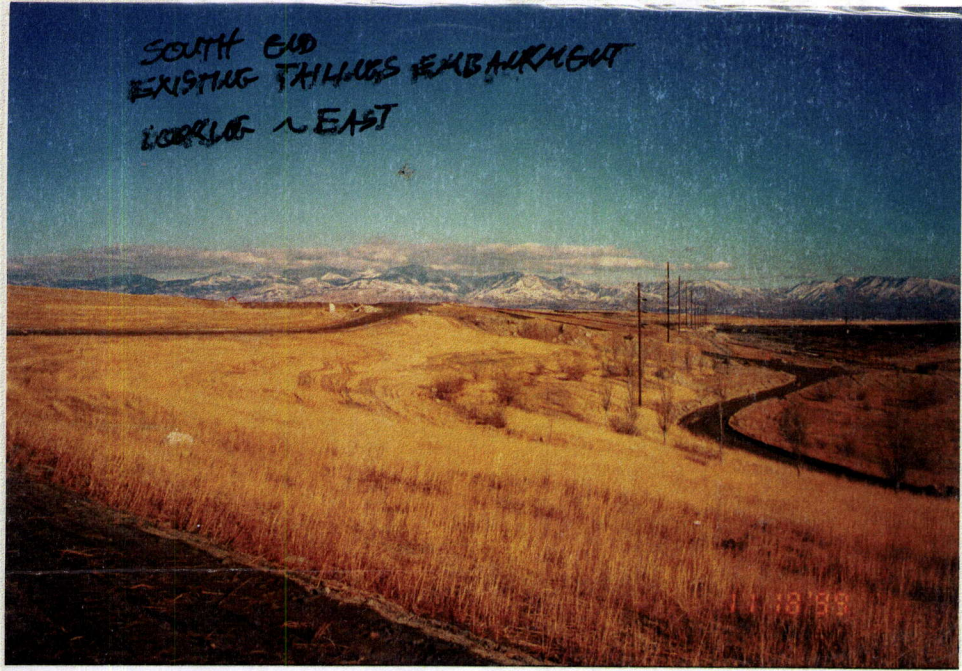




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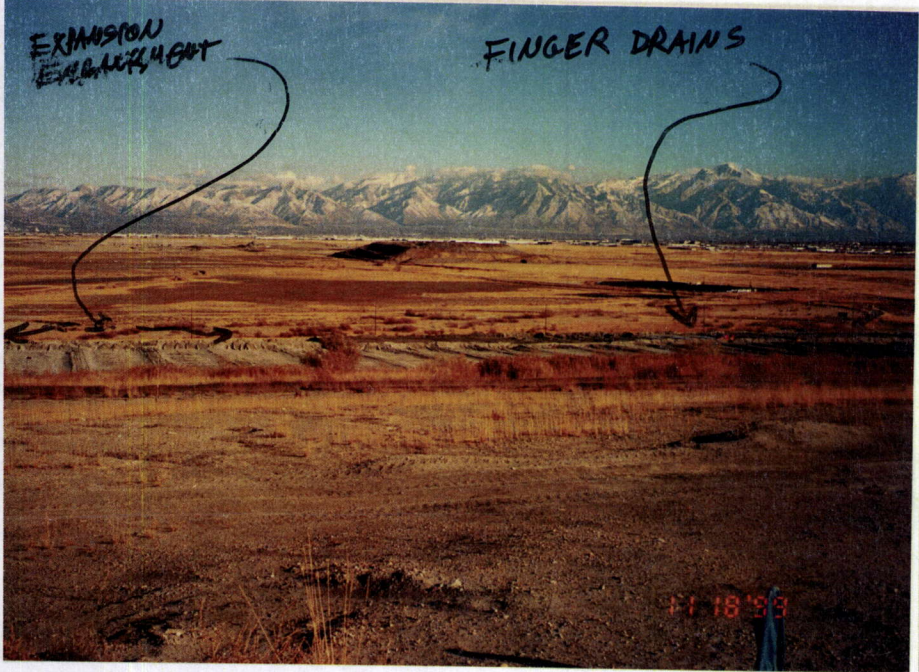
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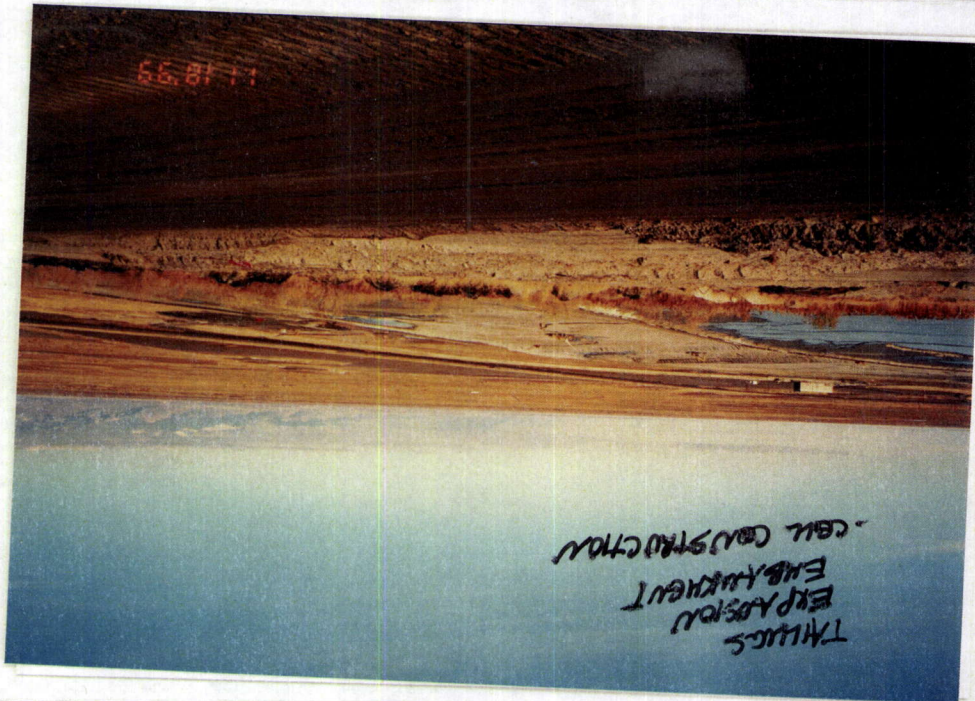
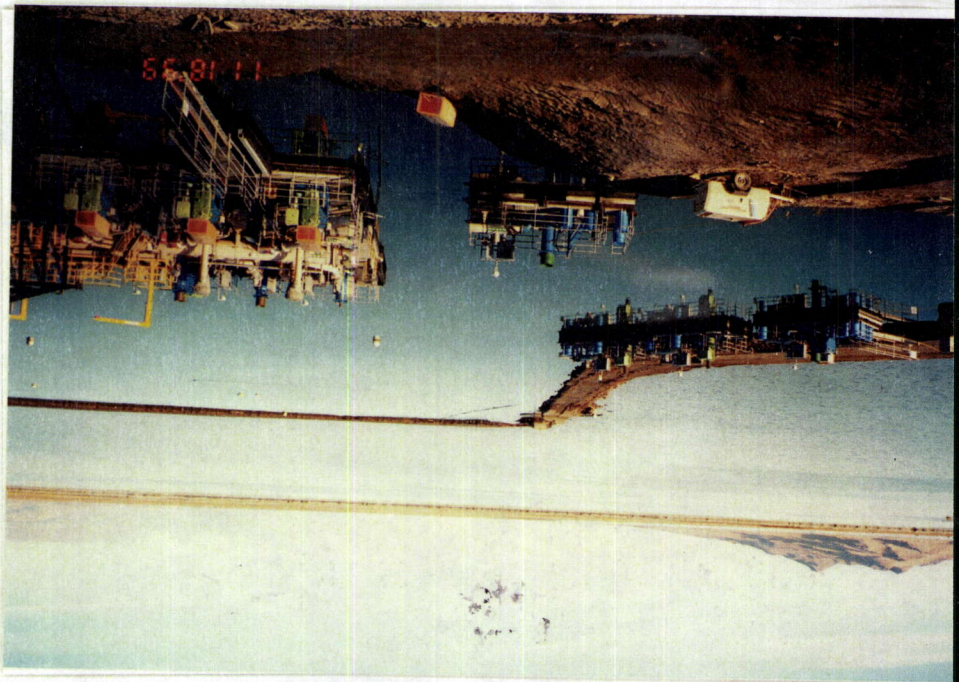


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